T91n

WA 2917

PORT OF SEATTLE

MEMORANDUM

10/2/89

T9

FILE COPY

DATE: October 2, 1989

TO: Dave Aggerholm

FROM: BobWells

SUBJECT: Soil Test Results, Underground Tanks at T-91

Summary of the results of the Laucks analyses of the initial soil samples around the abandoned tanks at T-91:

1. The three 10,000 gallon diesel tanks (d, e, & f) do not appear to have serious contmaination. TPH levels for five samples ranged from 22 ppm to 140 ppm vs. the WDOE guideline of 200 ppm. No BETX tests were run.

2. The gasoline tank (g) shows signs of contamination and probably has a some soil that should be removed. Two of three samples were within the WDOE limits for both TPH and BETX. The third, however, had a TPH of 810 ppm and the BETX values, though within limits, were noticeably higher. The pattern is consistent with gasoline contamination that has degraded over time.

3. The 650-gallon diesel tank at the NE corner of the old City Ice building is clearly a problem. The TPH from one sample was 50,000 ppm (5%) and the soils were clearly saturated. No BETX was run. The end of the tank which was partially exposed during sampling did not sound in good condition when rapped. Because of the proximity of the tank to the T-91 tank farm, we cannot, however, rule out the possibility of other sources contributing to the problem. Two sections of abandoned pipe of unknown history were encountered during the sampling. Significant soil remediation may be required for removal of this tank. Groundwater contamination may also need to be checked.

cc: Hotchkiss

RW/6324V

WA 2917

Lauck's 81 years Testing Laboratories, Inc.

940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063

Chemistry, Microbiology, and Technical Services

Certificate

CLIENT: Port of Seattle, Engineering Dept.
P.O. Box 1209
Seattle, WA 98111
ATTN: Robert Wells

LABORATORY NO. 18225

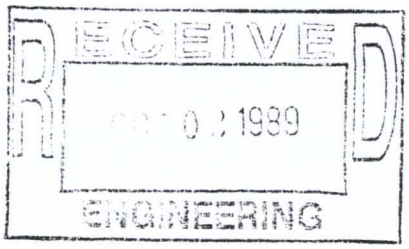
DATE: Sep 28, 1989

PROF. SERVICE AGREEMENT NO. P-023670

REPORT ON: SOIL

SAMPLE IDENTIFICATION: Submitted 8/24/89 and identified as shown:

1) 22-1 8/22 T-91-D/F
2) 22-2 8/22 T-91-D/F
3) 22-3 8/22 T-91-D/F
4) 22-4 8/22 T-91-D/F
5) 22-5 8/22 T-91-D/F
6) 23-1 8/22 T-91-G
7) 23-2 8/22 T-91-G
8) 23-3 8/22 T-91-G
9) 24-1 8/22 T-91-N



Prior to sieving soil samples, splits were removed for the volatile organics portions of the analysis. The remainder of the samples were then passed through a No. 10 sieve, with percent retained and description of retained matter shown below. Only material passing the sieve was analyzed for the remainder of the analyses.

Sample No.	% Retained	Major Description	Minor Description
1	3.	rocks	---
2	12.	rocks	---
3	10.	rocks	---
4	15.	rocks	---
5	4.	rocks	---
6	21.	rocks	---
7	33.	rocks	---
8	18.	rocks	---
9	26.	rocks	shell

Lauck's 81 years
Testing Laboratories, Inc.
940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063

Certificate

Chemistry, Microbiology, and Technical Services

Port of Seattle

LABORATORY NO. 18225

	1	2	3	4	5
Total Solids, %	77.7	79.2	80.5	83.7	72.6
	parts per million (mg/kg), dry basis				
Total Petroleum Hydrocarbon Oil & Grease	22.	110.	140.	79.	45.

	6	7	8	9	Lab Blank
Total Solids, %	84.7	87.2	83.8	87.1	<20.
	parts per million (mg/kg), dry basis				
Total Petroleum Hydrocarbon Oil & Grease	24.	78.	810.	50,000.	<20.

Laucks 81 years
Testing Laboratories, Inc.
940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063

Certificate

Chemistry. Microbiology. and Technical Services

Port of Seattle

LABORATORY NO. 18225

parts per billion (ug/kg), dry basis

	6	7	8
Benzene	<10.	<10.	<10.
Toluene	<10.	2100.	5400.
Ethylbenzene	<10.	630.	11,000.
Xylene	<10.	5400.	82,000.

Key

< = less than

Respectfully submitted,

Laucks Testing Laboratories, Inc.

J. M. Owens

JMO:veg

Lauck's 81 years
Testing Laboratories, Inc.
940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063

Certificate

Chemistry, Microbiology, and Technical Services

Port of Seattle

LABORATORY NO. 18225

APPENDIX A

Matrix Spike/Matrix Spike Duplicate Report

		parts per million (mg/L)				mg/L			QC LIMITS	
Sample	Analyte	Spike Level	Sample Result	MS Result	% Rec	MSD Result	% Rec	RPD	RPD	REC
6	O&G	590.	24.	640.	103.	590.	96.	7.	13	82-114

MS = Matrix Spike
MSD = Matrix Spike Duplicate
Rec = Recovery
RPD = Relative Percent Difference

Lauck's 81 years
Testing Laboratories, Inc.
940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063
Chemistry, Microbiology, and Technical Services

Certificate

Port of Seattle

LABORATORY NO. 18225

APPENDIX B

Surrogate Recovery Quality Control Report

Attached are surrogate (chemically similar) compounds utilized in the analysis of organic compounds. The surrogates are added to every sample prior to extraction and analysis to monitor for matrix effects, purging efficiency, and sample processing errors. The control limits represent the 95% confidence interval established in our laboratory through repetitive analysis of these sample types.

Key

D. Persistently poor surrogate and spike recoveries signal a laboratory problem and the need for re-extraction and re-analysis. However, occasional outliers are regarded as anomolies and, in this case, re-analysis was not deemed necessary because other indicators were in control.

JOB No. 18225 DATE: 09/27/89

Sample No. B0908GV0.WA1 Matrix: Soil Analysis: GC-FID

Surrogate Compound	Percent Recovery	Comment	Control Limits
N-propylbenzene	93		70 - 130

Sample No. B0927GV0.WC1 Matrix: Soil Analysis: GC-FID

Surrogate Compound	Percent Recovery	Comment	Control Limits
N-propylbenzene	101		70 - 130

Sample No. 6 Matrix: Soil Analysis: GC-FID

Surrogate Compound	Percent Recovery	Comment	Control Limits
N-propylbenzene	102		70 - 130

Sample No. 7 Matrix: Soil Analysis: GC-FID

Surrogate Compound	Percent Recovery	Comment	Control Limits
N-propylbenzene	104		70 - 130

Sample No. 8 Matrix: Soil Analysis: GC-FID

Surrogate Compound	Percent Recovery	Comment	Control Limits
N-propylbenzene	109		70 - 130